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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,639	02/08/2006	Jan Matthijs Jetten	0470-048036	9145

28289 7590 08/25/2009  
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EXAMINER
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CHAUDHRY, SAEED T

ART UNIT	PAPER NUMBER
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1792

MAIL DATE	DELIVERY MODE
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08/25/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,639	<b>Applicant(s)</b> JETTEN ET AL.	
	<b>Examiner</b> Saeed T. Chaudhry	<b>Art Unit</b> 1792	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1792

## **DETAILED ACTION**

Applicant's amendments and remarks filed May 4, 2009 have been acknowledged by the examiner and entered. Claims 1-12 and 19 have been canceled and claims 13-18 and 20-22 are pending in this application for consideration.

### **Priority**

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

### **Claim Rejections - 35 USC § 112**

Rejected under 35 U.S.C. § 112, second paragraph, has been withdrawn in view of amendments filed May 4, 2009.

### **Double Patenting**

Rejected under the judicially created doctrine of obviousness-type double patenting has been withdrawn by the examiner in view of remarks and amendments filed May 4, 2009.

### **New ground of rejection Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

**Claims 13-15 and 17-18 are rejected under 35 U.S.C. § 103 as being unpatentable over Jennings in view of Fremont et al. and Schuchardt.**

Jennings (3,912,624) discloses that it is considered conventional to periodically back-flush the units and clean the membrane surfaces with a cleaning flow stream. It is also known and generally conventional in the membrane separation field to periodically make use of certain additives or cleaning agents. For example, in connection with the handling of certain food materials and in the processing of cheese to obtain protein and lactose, there can be the growth of fungus and bacteria on membranes and in headers or other parts of the equipment. In order to assure an uncontaminated clean system, there can be the use of a sanitizing solution added to a flushing fluid during the periodic cleaning procedure. Such solution may, for example, comprise a mild hypochlorous acid solution or an iodine-phosphoric acid complex, or various of the cleaning agents used in the dairy industry to remove molds and various bacteriological growths (see col. 1, lines 12-40). The reference fails to specifically remove protein or polyphenol from the membrane and membrane is made from polymer.

Fremont et al. (4,740,308) disclose a process of cleaning fouled separation membranes such as reverse osmosis (made from polymer) contacting with an inorganic peroxide and rinsing with alkali metal hydroxide. Wherein the pH is between 8.5 to 11 (see abstract, col. 1, line 4, col. 3, line 40-68 through col. 4, line 32 and claims). The reference fails to clean residues from filtering beverages.

Schuchardt (4,970,005) disclose a method of treating wastewater containing insoluble high molecular weight poly impurities by reacting wastewater with an oxidizing agent such as hydrogen peroxide and optionally with a transition metal catalyst, wherein

Art Unit: 1792

the transition metals are iron, manganese and zinc. The pH of the stream is greater than 7 (see abstract , col. 3, lines 51-67 and claims).

It would have been obvious at the time applicant invented the claimed process to include a transition metal catalyst agent into the process of Jennings because Schuchardt discloses that transition metal catalyst degrade higher molecular weight to lower molecular weight. One of ordinary skill in the art would use Jennings process for removing residue from the polymer membrane since Fremont et al. disclose that reverse osmosis membrane are made of polymers. Further, one of ordinary skill in the art would manipulate the flow rate of the solution for better and efficient result by routine experimentation. Since all the references are in the same field of endeavor. Therefore, one of ordinary skill in the art would use Schuchardt teaching of using oxidizing agent and transition metal catalyst for disintegrating higher molecular weight to lower molecular weight in the water which provide motivation to use in the beverage residue of higher molecular weight to reduce to a lower molecular weight.

**Claim 16 is rejected under 35 U.S.C. § 103 as being unpatentable over Jennings in view of Fremont et al. and Schuchardt, as applied to claim 13 above, and further in view of Doddema et al.**

Jennings, Fremont et al. and Schuchardt were discussed supra. However, the references fails to disclose that the transition metal is complexed with polyamine.

Doddema et al (5,667,690) disclose method of removing phenols from waste water by treating with a complex of transition metal and a polyamine in the presence of peroxide, wherein peroxide is peracid (see abstract, col. 1, lines 32-46 and claims).

It would have been obvious at the time applicant invented the claimed process to incorporate polyamine in the process of Jennings , since Doddema et al. disclose that phenols compounds are effectively removed by treating with a complex of transition metal and polyamine in the presence of peroxide. One would use the teaching of Doddema et al into the process of Jennings since both the references are references are in the same field of endeavor.

**Claims 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jennings in view of Fremont.**

Jennings (3,912,624) discloses that it is considered conventional to periodically back-flush the units and clean the membrane surfaces with a cleaning flow stream. It is also known and generally conventional in the membrane separation field to periodically make use of certain additives or cleaning agents. For example, in connection with the handling of certain food materials and in the processing of cheese to obtain protein and lactose, there can be the growth of fungus and bacteria on membranes and in headers or other parts of the equipment. In order to assure an uncontaminated clean system, there can be the use of a sanitizing solution added to a flushing fluid during the periodic cleaning procedure. Such solution may, for example, comprise a mild hypochlorous acid solution or an iodine-phosphoric acid complex, or various of the cleaning agents used in the dairy industry to remove molds and various bacteriological growths (see col. 1, lines 12-40). The reference fails to specifically remove protein or polyphenol from the membrane and membrane is made from polymer.

Fremont et al. (4,740,308) disclose a process of cleaning fouled separation membranes such as reverse osmosis (made from polymer) contacting with an inorganic

Art Unit: 1792

peroxide and rinsing with alkali metal hydroxide. Wherein the pH is between 8.5 to 11 (see abstract, col. 1, line 4, col. 3, line 40-68 through col. 4, line 32 and claims). The reference fails to clean residues from filtering beverages.

It would have been obvious at the time applicant invented the claimed process use Jennings process for removing residue such as protein or polyphenol since Jennings discloses that it is conventional to remove fats and oil from the surface of membrane with hypochlorous acid. Further, Jennings disclosed fats which includes protein. Therefore, proteins are also inherently remove by the Jennings process. Furthermore, polymer membrane are well known in the art as disclosed by Fremont et al. in separation processes. Therefore, one of ordinary skill in the art would use Jennings process for removing residue for cleaning membrane.

It would have been obvious to use alkaline solution as disclosed by Fremont et al. for rinsing membrane since one of ordinary skill in the art would use alkaline solution before or after using hypohalous acid for neutralizing the surface of membrane. One would adjust pH between 11 and 14 for better and efficient results with routine experimentation and Fremont et al. suggested to use pH from 8.5 to 11.

### **Response to Applicant's Arguments**

Applicant argued that Schuchardt, Doddema et al. and Fremont are not directed to treating polymer filters used in beverage industry.

This argument is not persuasive because all of the references are in the same field of endeavor such as removing higher molecular weight to lower molecular weight or dissolving. Therefore, one of ordinary skill in the art would use these teaching for removing higher molecular weight residues from the membrane, which is used in the

Art Unit: 1792

beverage industries since beverage industries are also concern in removing higher molecular weight molecules.

In response to applicants' argument that there is no suggestion to combine the references, the Examiner recognizes that the references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosure taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971) the references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA 1969). In this case, treatment of water and removing residue from a membrane surface are in the same field of endeavor.

Applicant's arguments with respect to claims 13-18 and 20-22 have been considered but are deemed to be moot in view of the new grounds of rejection.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, THIS ACTION IS MADE FINAL. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.



Art Unit: 1792

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.*

*If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.*

*When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.*

*Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.*

**Saeed T. Chaudhry**

*Patent Examiner*

*/Michael Barr/*

*Supervisory Patent Examiner, Art Unit 1792*